

## MODEL A, H ASSEMBLY INSTRUCTIONS

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion. Open the access plate in the exhaust housing and disconnect the shift rod coupling at the upper cap screw. Remove gearbox cap screws and drop propeller-gearbox assembly.
2. Remove the “O” ring from the top of the driveshaft and the water pump assembly.
3. Next, install the jet pump driveshaft assembly into the spiral pump housing, locking it in place with two #10-24 fillister screws and spring lockwashers.
4. Install the water pump assembly and “O” ring at the driveshaft spline. Be sure the pump is in good condition and that the rubber impeller fingers are all pointing backwards when turning the driveshaft in a clockwise direction looking down from above. Don't forget impeller drive pin.
5. In removing the propeller unit, it was necessary to disconnect the shift rod at the exhaust housing access hole. This rod would later rattle from vibrations so a spring is provided to urge the loose end of the rod sideways so that it drags in its guide hole. The brass shift rod coupling is removed and the shift rod and the spring is installed with the right angle loop around the groove in the shift rod and the fully bent back loop over the access plate upper screw hole. Leave the access plate upper screw hole. Leave the access plate gasket in place in the exhaust housing and allow this gasket to wedge between the main body loops of the spring when the flat loop is over the screw hole. This wedging will hold the spring in position long enough to get the plate and screws in place after which the spring loop cannot get out.
6. Tip the engine up toward the horizontal. Next install the jet pump housing and shaft assembly onto the engine, using the 4 – 1/4-20 screws and lockwashers and the 3/8-16 cap screws which held the propeller unit. Be sure, as you guide the unit into position, that the water tube engages the pump. A little grease helps on this rubber coupling. Start all screws into the engagement before tightening any one. The 3/8 bolt hole in the engine exhaust housing is die cast, not drilled, and there may be slight binding at this hole. You can relieve the hole with a round file if necessary. Tighten the 4 1/4-20 screws to 125 in-lbs torque (25 lbs at the end of a 5 inch wrench for example.)
7. Tip the engine back to a vertical position. Next install the impeller for blade clearance adjustment. Place in position the fiber shaft sleeve, the impeller, shear pin keeper, stack of 6 shim washers, and shaft nut. Bring up the nut snug. Install the water intake, locking in place with 2 screws only. Look inside. Clearance between the blade edge and casing should be 1/64 to 1/32 inch. (A shim washer for example is 1/32 thick.) If clearance is excessive, place one shim washer above the impeller and repeat.
8. Now remove the intake casing and reassemble as follows:  
If shims are required, place the proper number above the impeller, place the plastic impeller sleeve on the shaft. Put on the impeller, the shear pin, the shear pin keeper, the remaining shims from the stack of 6, and the nut. (See paragraph 9.) Turn the nut up snug and then bump the wrench further until the cotter pin hole lines up. Put in the cotter pin and fold the ends around. If erosion or wear in abrasive conditions open the blade tip clearance up excessively, there will be a loss of pressure and performance. At this point one or two shims, as required, would be removed from the lower stack and placed on the shaft above the impeller which moves it down into the casing taper, thus reducing the clearance.
9. Model A jets now use a drive key instead of a shear pin with shear pin keeper, and 9 shims instead of 6.
10. Place the intake casing in position with the 1/4 inch lip forward and tighten the 6 screws.
11. To attach the gate shift linkage, remove the shift lever which is held in place with a screw in the split clamp and a 1/4-20 cap screw and star lock washer. Be careful not to lose the star lock washer. Place the

## MODEL A, H ASSEMBLY INSTRUCTIONS

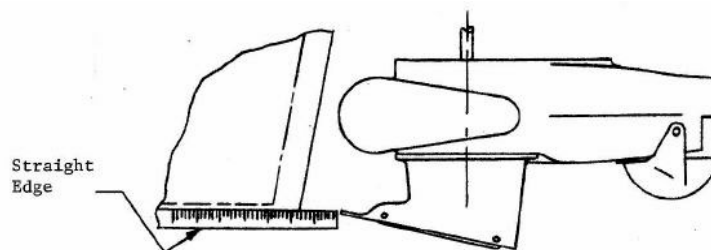
sheet metal shift arm in position and replace the shift lever. The star lock washer must be placed beneath the sheet metal shift arm or the aluminum shift lever will be cracked when then cap screw is tightened. Tighten the cap screw initially in the center of the slot in the shift lever.

12. Next, attach the shift rod. The spring clip is used at the upper end and the flat washer with cotter pins used at both ends. Adjustment should be made on the length of this rod so that with the shift lever in the forward position, the gate is forced solidly against the rubber pad beneath the pump housing so that there is no rattle in the system. Further refinements in adjustment should be made at the cap screw in the slotted hole on the shift lever such that in "forward" the triangular shift arm comes on center, in line with the shift rod. This provides an "on center" locking toggle to prevent the gate from being pushed into reverse by water motion. (See sheet 4.) Next lock all screws. Do not be concerned if, in reverse position, the gat is not entirely closed. The pivot positions on the gate are designed so that water pressure holds the gate in reverse in fact, you will not be able to shift to forward from reverse if the engine is running above a fast idle due to this water pressure. You can, however, shift to reverse at any forward speed and this can be dangerous since the engine will kick up just as though you had hit a log with a propeller unit. Use caution here or tie your engine down if you want to experiment with getting wet.
13. Lubricate the shaft bearing as explained in separate sheet, MAINTENANCE AND LUBRICATION.

### MODELS A, H, Q

14. When converting to jet drive, your motor will have to be raised to the height shown below, using a straight edge under the boat. Test run the boat and then raise or lower the motor 1/4 inch at a time to obtain the best results, using wood shim under the motor clamps. If you raise it too much it will suck air and cavitate, either on start up or when banking on turns. When cavitating, the engine overspeeds in spurts and shakes considerably in the engine mount. This is not a normal condition and should be avoided by proper adjustment of engine height on each individual boat. If you lower it too much you will have excessive drag, therefore mount the engine as high as possible without allowing cavitation. Good boating and have fun!

### SETTING MOTOR HEIGHT



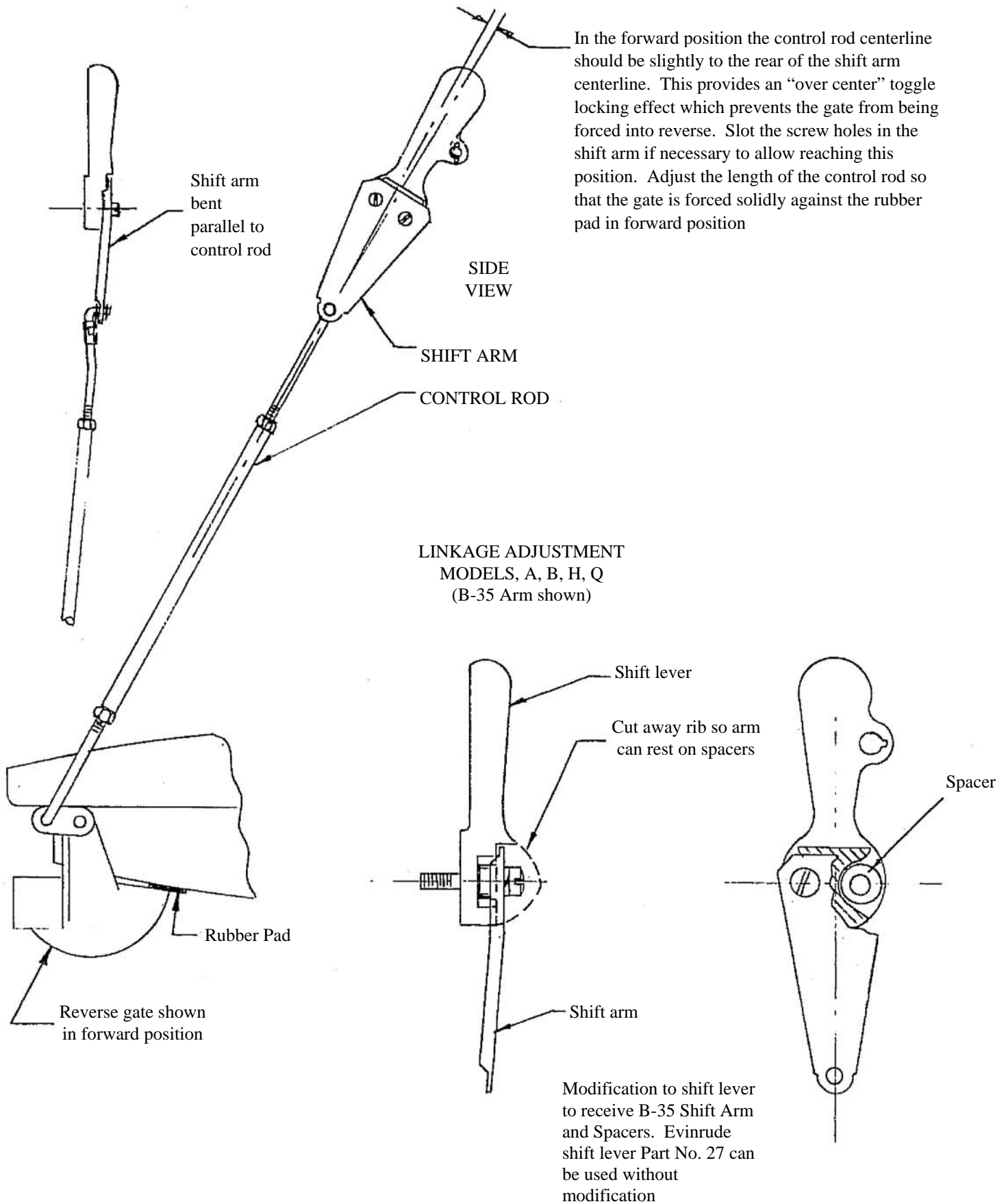
### CAUTION

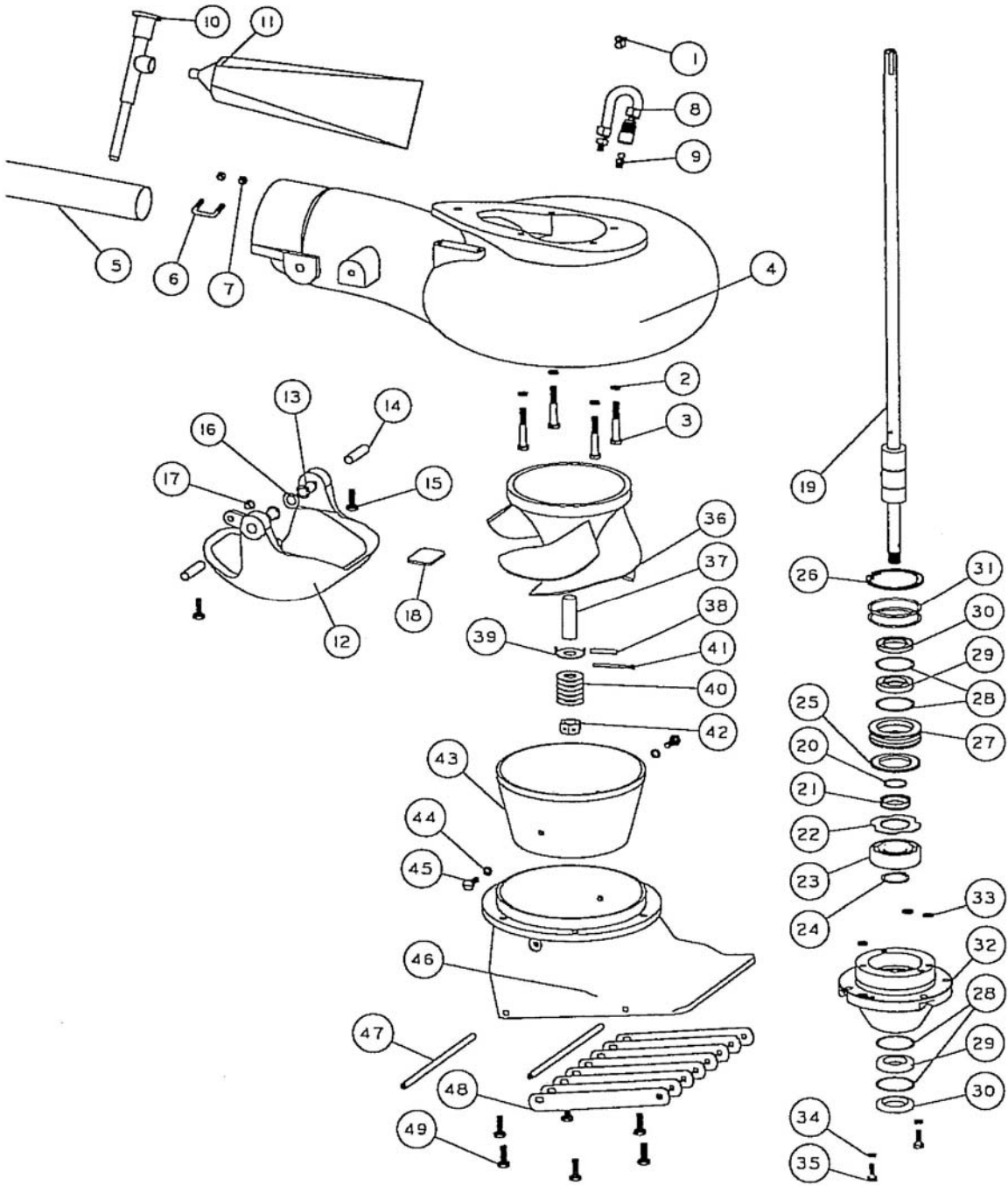
When starting the engine for the first time, watch to see that the cooling water comes out of the small hole at the rear side of the engine just below the power head. This is to check your assembly of the cooling water pump and its connections.

### MAINTENANCE AND LUBRICATION

See last page.

# MODEL A, H ASSEMBLY INSTRUCTIONS





# MODEL H EVINRUDE / JOHNSON

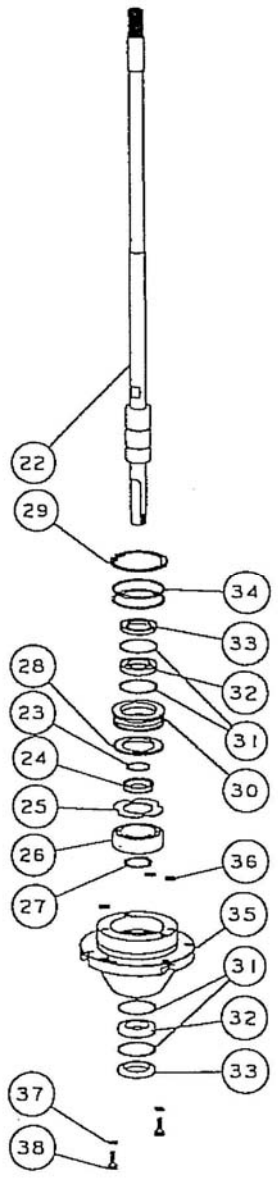
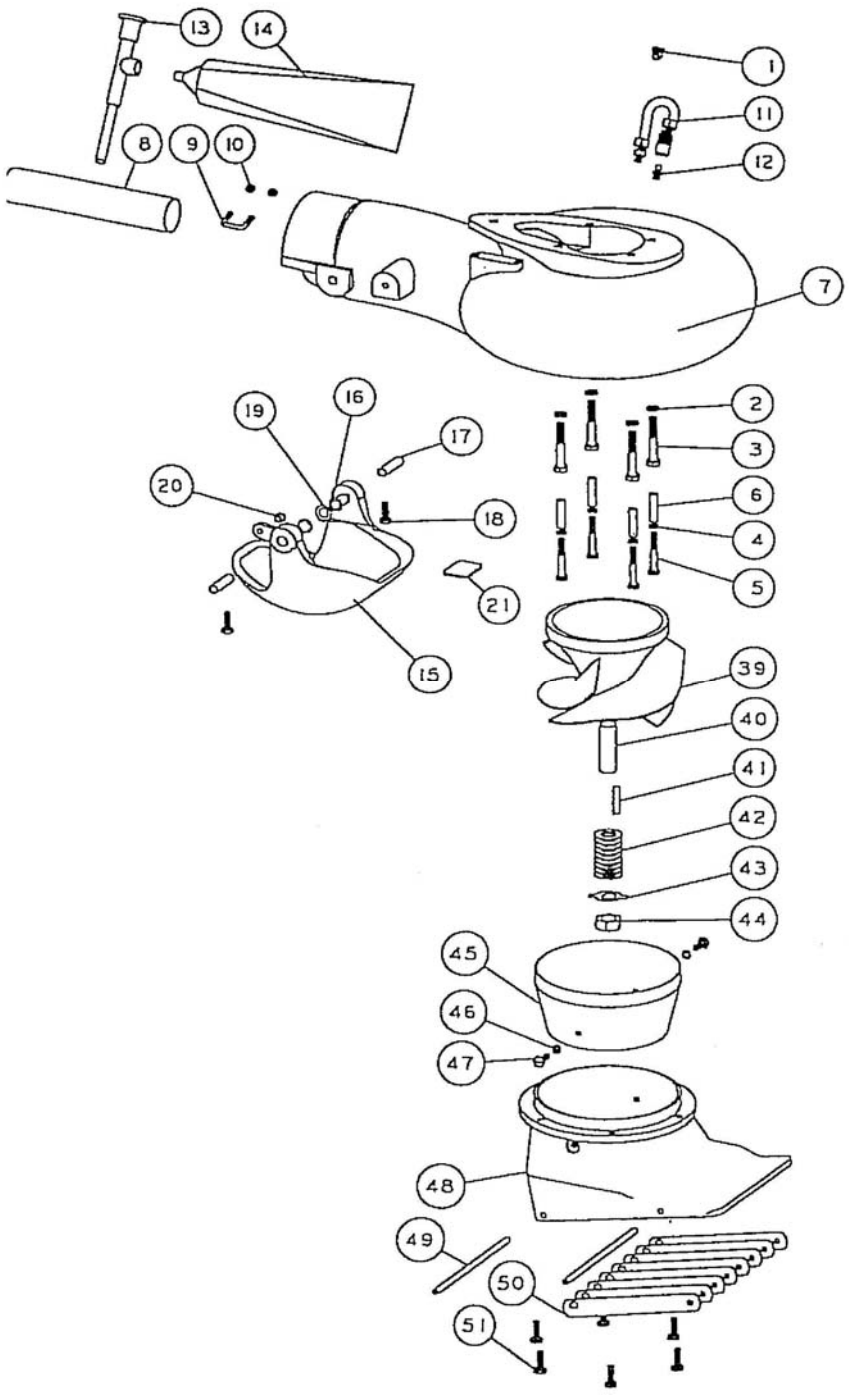
REF	QTY	PART NO.	DESCRIPTION
1	1	28	SHIFT SPRING A H Q
2	4	638	WASHER SPRING LOCK 1/4
3	4	578	BOLT HEX HD 1/4-20 X 1 3/4
		22600	RECOUP GATE H
4	1	226	RECOUP TUBE H
5	1	221	EXHAUST TUBE SMALL 1 1/2
6	1	847	CLIP EXHAUST TUBE 3/4
7	2	621	NYLOC 10-32
8	1	975	LUBE HOSE ASSY
9	1	539	1/4-28 THREAD HYDRAULIC ZIRC
10	1	550	GREASE GUN 30195
11	1	552	GREASE 10 OZ TUBE NO.630-AA
12	1	825	GATE PAINTED HV 3/8
13	2	535	NYLINER 6L11FK 3/8 ID X 11/16
14	2	821	PIN GATE PIVOT 3/8 SMALL
15	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH
16	1	1177	SPRING GATE PIVOT 3/8
17	1	533	NYLINER 4L4F 1/4 ID
18	1	82	GATE CUSHION
		225	DSHAFT ASSY H
19	1	214	DRIVESHAFT & SLV H
20	1	41	SHAFT BEARING THRUST RING
21	1	477	COLLAR BACKFIT 7205
22	1	832	THRUST WASHER SMALL MEDIUM
23	1	504	BEARING 7205B-UA
24	1	511	TRUARC 5100-98SPP
25	1	833	SPACER 7205 MILLED
26	1	512	TRUARC N5002-212ZDL
27	1	433	SEAL RING ASSY MEDIUM
28	4	517	SPIROLOX RR-150S
29	2	506	SEAL INNER 0857
30	2	507	SEAL OUTER 1317 REV B
31	2	526	O RING 568-135
32	1	208	BEARING CARRIER SEALS H
33	3	521	O RING 568-011 1/16X5/16X7/16
34	2	637	WASHER SPRING LOCK #10
35	2	561	FIL HD SLOTTED 10-24 X 5/8
36	1	206	IMPELLER 5 3/4 W/220 SLEEVE
36	1	207	IMPELLER 6 W/220 SLEEVE
37	1	220	SHAFT SLEEVE PLASTIC SMALL
38	1	223	SHEAR PIN 3/16 SMALL
39	1	217	SHEAR PIN KEEPER
40	6	218	SHIM WASHER SMALL
41	1	646	COTTER PIN 3/32 X 1 1/4
42	1	222	SHAFT NUT DRILLED 1/2-20
		224.1	INTAKE ASSY 5 3/4
43	1	287	LINER 5 3/4 W/HARDWARE
		224.2	INTAKE ASSY 6
43	1	855	LINER 6 W/HARDWARE
44	2	638	WASHER SPRING LOCK 1/4
45	2	572	BOLT HEX HD 1/4-20 X 5/8
46	1	204	INTAKE PAINTED SMALL
46	1	853	INTAKE PAINTED 6
47	2	216	GRILL ROD SMALL
48	8	215	GRILL BAR SMALL
49	6	573	BOLT HEX HD 1/4-20 X 3/4

SIZE	TORQUE
1/4-20 (M6)	8-9 FT-LBS
5/16-18 (M8)	12 FT-LBS
3/8-16 (M10)	22 FT-LBS

TILLER STEERING  
SHIFT CABLE ASSY 1263, 1264 SEE PAGE 21

BEARING, SEAL, SNAP & "O" RING KIT  
2 BRG 462.2

**MODEL H EVINRUDE / JOHNSON**



# MODEL H9 EVINRUDE / JOHNSON

REF	QTY	PART NO.	DESCRIPTION
1	1	28	SHIFT SPRING A H Q
2	4	640	WASHER SPRING LOCK 5/16 (1983 and later)
3	4	595	BOLT HEX HD 5/16-18 X 2 (1983 and later)
4	4	638	WASHER SPRING LOCK 1/4 (1982 and prior)
5	4	578	BOLT HEX HD 1/4-20 X 1 3/4 9 (1982 and prior)
6	4	365.2	ADAPTER SLEEVE H9 (1982 and prior)
		8900	RECOUP GATE H9
7	1	89	RECOUP TUBE H9
8	1	221	EXHAUST TUBE SMALL 1 1/2
9	1	847	CLIP EXHAUST TUBE 3/4
10	2	621	NYLOC 10-32
11	1	975	LUBE HOSE ASSY
12	1	539	1/4-28 THREAD HYDRAULIC ZIRC
13	1	550	GREASE GUN 30195
14	1	552	GREASE 10 OZ TUBE NO.630-AA
15	1	825	GATE PAINTED HV 3/8
16	2	535	NYLINER 6L11FK 3/8 ID X 11/16
17	2	821	PIN GATE PIVOT 3/8 SMALL
18	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH
19	1	1177	SPRING GATE PIVOT 3/8
20	1	533	NYLINER 4L4F 1/4 ID
21	1	82	GATE CUSHION
		409	DSHAFT ASSY H9
22	1	409.3	DRIVESHAFT & SLV H9
23	1	41	SHAFT BEARING THRUST RING
24	1	477	COLLAR BACKFIT 7205
25	1	832	THRUST WASHER SMALL MEDIUM
26	1	504	BEARING 7205B-UA
27	1	511	TRUARC 5100-98SPP
28	1	833	SPACER 7205 MILLED
29	1	512	TRUARC N5002-212ZDL
30	1	433	SEAL RING ASSY MEDIUM
31	4	517	SPIROLOX RR-150S
32	2	506	SEAL INNER 0857
33	2	507	SEAL OUTER 1317 REV B
34	2	526	O RING 568-135
35	1	413	BEARING CARRIER SEALS H9
36	3	521	O RING 568-011 1/16X5/16X7/16
37	2	637	WASHER SPRING LOCK #10
38	2	561	FIL HD SLOTTED 10-24 X 5/8
39	1	414	IMPELLER 6-79 36.1, 1705(2)
40	1	36	SHAFT SLEEVE PLASTIC MED.-OBSSO
41	1	782	TEE KEY MED 1/8
42	9	21	SHIM WASHER MEDIUM
43	1	805	NUT KEEPER FOLDED SMALL, MED
44	1	22.1	SHAFT JAM NUT 5/8-18 BRASS
		224.2	INTAKE ASSY 6
45	1	855	LINER 6 W/HARDWARE
46	2	638	WASHER SPRING LOCK 1/4
47	2	572	BOLT HEX HD 1/4-20 X 5/8
48	1	853	INTAKE PAINTED 6
49	2	216	GRILL ROD SMALL
50	8	215	GRILL BAR SMALL
51	6	573	BOLT HEX HD 1/4-20 X 3/4

SIZE	TORQUE
1/4-20 (M6)	8-9 FT-LBS
5/16-18 (M8)	12 FT-LBS
3/8-16 (M10)	22 FT-LBS

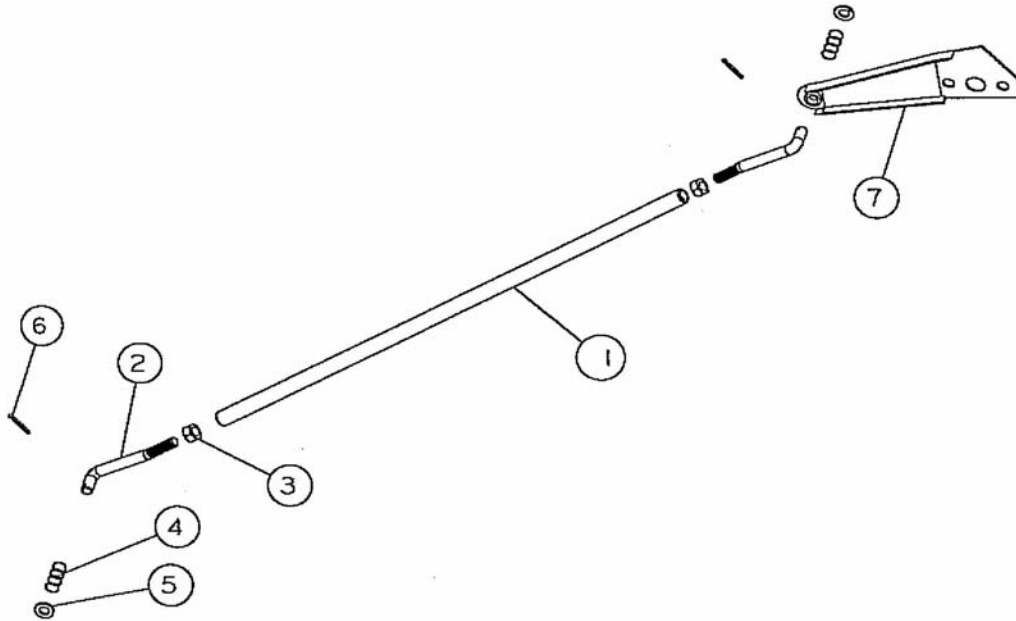
TILLER STEERING  
SHIFT CABLE ASSY 1263, 1264 SEE PAGE 21

BEARING, SEAL, SNAP & "O" RING KIT  
2 BRG 462.2



**MODEL H9 EVINRUDE / JOHNSON**

SHIFT ROD ASSEMBLY  
 EVINRUDE/JOHNSON MODELS H, H79  
 227



REF	QTY	PART NO.	DESCRIPTION
1	1	219	SHIFT ROD H 14 5/16
2	2	24	ROD END FORMED
3	2	622	NUT HEX 1/4-28
4	2	1164	SPRING-ROD END
5	2	635	1/4 WASHER AN960C416
6	2	645	COTTER PIN 1/16 x1/2
7	1	211	SHIFT LEVER HQ